AMENDMENTS TO THE CLAIMS

1-50. (CANCELLED)

51-61. (WITHDRAWN)

62-82. (CANCELLED)

83-88. (WITHDRAWN)

89-94. (CANCELLED)

95. (NEW) A method for determining the concentration of an analyte in a patient, in no particular sequence, comprising:

providing an optical detection system which is portable and sized and configured to be small enough to fit in the palm or pocket of the patient, the detection system comprising a housing, at least one source of electromagnetic radiation, at least one detector, an optical path extending between the source and the detector, and a filtering system in the optical path, the filtering system configured to allow passage of at least one of the following wavelengths emitted by the source: about 4.2 μm, about 5.25 μm, about 6.12 μm, about 7.4 μm, about 8.0 μm, about 8.45 μm, about 9.25 μm, about 9.65 μm, about 10.4 μm, about 12.2 μm;

providing a disposable sample element comprising a reagentless sample cell and an opening, the sample cell and the opening being in fluid communication through a sample supply passage, the sample cell being formed at least in part by at least one window constructed from a material selected from the group consisting of polyethylene and polypropylene;

installing the sample element into the housing of the optical detection system;

positioning the sample element such that the sample cell is located at least partially in the optical path and such that the opening of the sample element is exposed outside the housing;

extracting a sample of biological fluid from the patient;

contacting the opening of the sample element with the sample, such that a portion of the sample is drawn into the sample element;

transporting the sample portion from the opening to the sample cell through the supply passage via capillary action;

transmitting a calibration beam of radiation from the source through the sample element, but not through the sample portion, such that a calibration signal is generated by the optical detection system, the sample element having a first window separation where the calibration beam passes through the sample element;

transmitting an analyte beam of radiation from the source through the sample element and through the sample portion, such that an analyte signal is generated by the optical detection system, the sample element having a second window separation where the calibration beam passes through the sample element, the second window separation being different from the first window separation; and

correcting the analyte signal using the calibration signal to substantially eliminate the absorption of the sample element.

96. (NEW) The method of Claim 95, wherein the volume of the sample portion drawn into the sample element is less than about 0.327 microliters.

97. (NEW) The method of Claim 95, wherein transporting the sample portion comprises transporting less than about 0.177 microliters of the sample portion into the sample cell.

98. (NEW) The method of Claim 95, further comprising filtering at least part of the sample portion.

99. (NEW) The method of Claim 95, further comprising filtering at least part of the sample portion in the sample element.

100. (NEW)The method of Claim 95, wherein transmitting the calibration beam and transmitting the analyte beam comprise transmitting the calibration beam before transmitting the analyte beam.

101. (NEW) The method of Claim 95, wherein transmitting the calibration beam and transmitting the analyte beam comprise transmitting the calibration beam after transmitting the analyte beam.

102. (NEW) The method of Claim 95, wherein the first window separation is smaller than the second window separation.

103. (NEW) The method of Claim 95, wherein the first window separation is zero.

104. (NEW) The method of Claim 95, wherein the sample of biological fluid is selected from the group consisting of whole blood, blood component(s), interstitial fluid, intercellular fluid, saliva, urine and sweat.

105. (NEW) An apparatus for determining the concentration of an analyte in a biological fluid sample drawn from a patient, the apparatus comprising:

an optical detection system which is portable and sized and configured to be small enough to fit in the palm or pocket of the patient, the detection system comprising a housing, at least one source of electromagnetic radiation, at least one detector, an optical path extending between the source and the detector, and a filtering system in the optical path, the filtering system configured to allow passage of at least one of the following wavelengths emitted by the source: about 4.2 μm, about 5.25 μm, about 6.12 μm, about 7.4 μm, about 8.0 μm, about 8.45 μm, about 9.25 μm, about 9.65 μm, about 10.4 μm, about 12.2 μm;

a patient-removable sample element comprising an opening and a reagentless sample cell configured to hold the biological fluid sample, the sample cell and the opening being in fluid communication through a capillary transport mechanism, the sample cell being defined at least in part by a pair of windows constructed from a material selected from the group consisting of polyethylene and polypropylene;

the sample element being removably installed in the housing of the optical detection system such that the sample cell is located at least partially in the optical path and such that the opening of the sample element is exposed outside the housing;

a calibration beam of radiation transmitted from the source through the sample element, but not through the biological fluid sample, and a corresponding calibration signal generated by the optical detection system, the sample element having a first window separation where the calibration beam passes through the sample element;

an analyte beam of radiation transmitted from the source through the sample element and through the biological fluid sample, and a corresponding analyte signal generated by the optical detection system, the sample element having a second window separation where the calibration beam passes through the sample element, the second window separation being different from the first window separation; and

a processor for correcting the analyte signal by using the calibration signal to substantially eliminate the absorption of the sample element.

106. (NEW) The apparatus of Claim 105, wherein the combined volume of the sample cell and capillary transport mechanism is less than about 0.327 microliters.

107. (NEW) The apparatus of Claim 105, wherein the volume of the sample cell is less than about 0.177 microliters.

108. (NEW) The apparatus of Claim 105, further comprising a filter located in the sample element and configured to filter the biological fluid sample.

109. (NEW)The apparatus of Claim 105, wherein the first window separation is smaller than the second window separation.

110. (NEW)The apparatus of Claim 105, wherein the second window separation is between about 1 micron and about 100 microns.

111. (NEW)The apparatus of Claim 105, wherein the biological fluid sample is selected from the group consisting of whole blood, blood component(s), interstitial fluid, intercellular fluid, saliva, urine and sweat.

112. (NEW)The apparatus of Claim 105, wherein the filtering system is selected from the group consisting of a filter wheel and a tunable filter.

113. (NEW) The apparatus of Claim 105, further comprising a sample extractor located in the housing.